

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

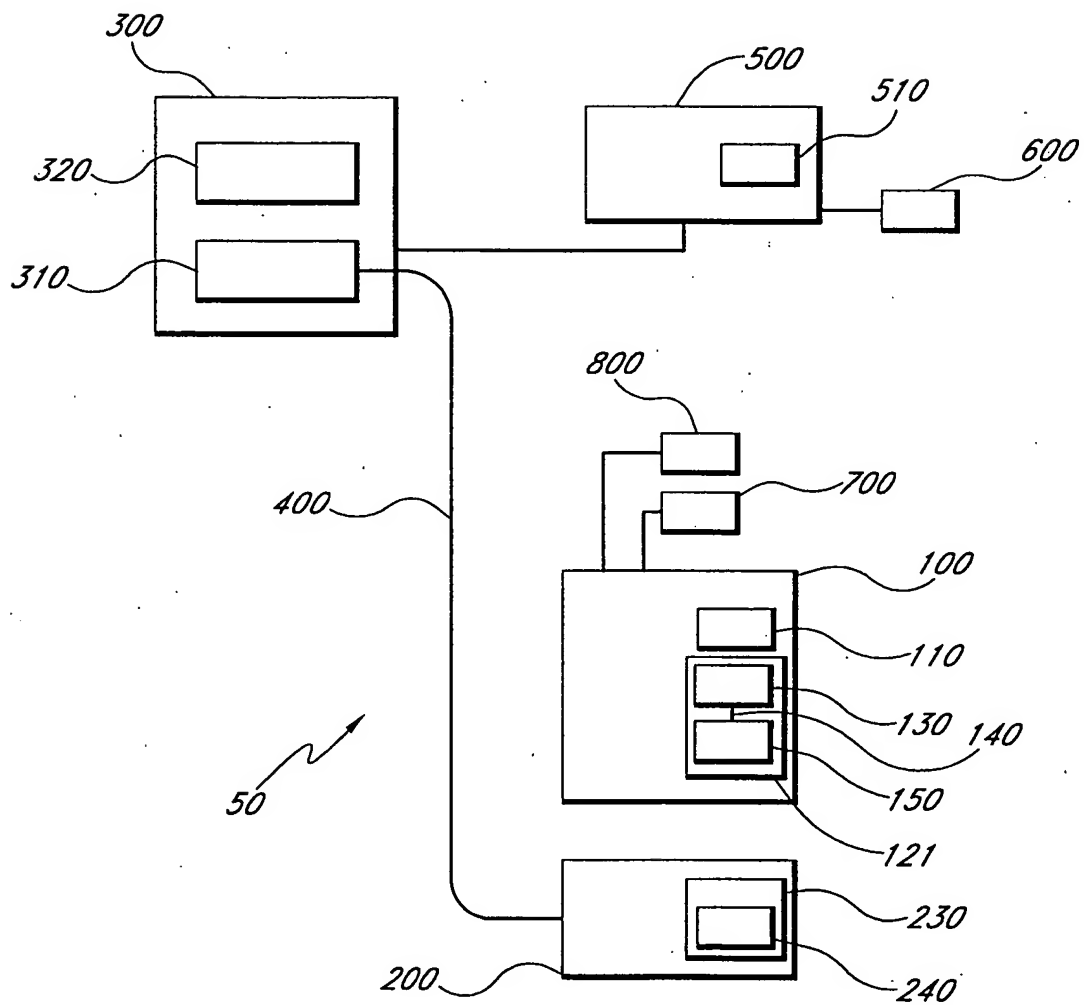


FIG. 1

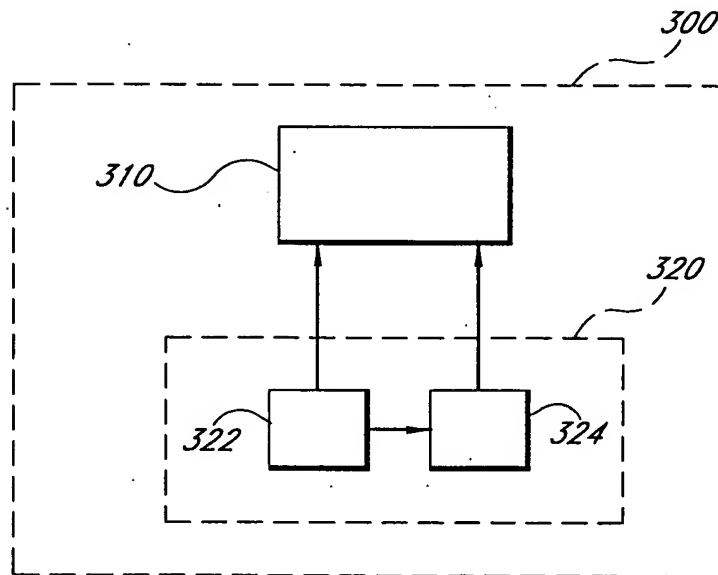


FIG. 2

**LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE**

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI

3 of 37

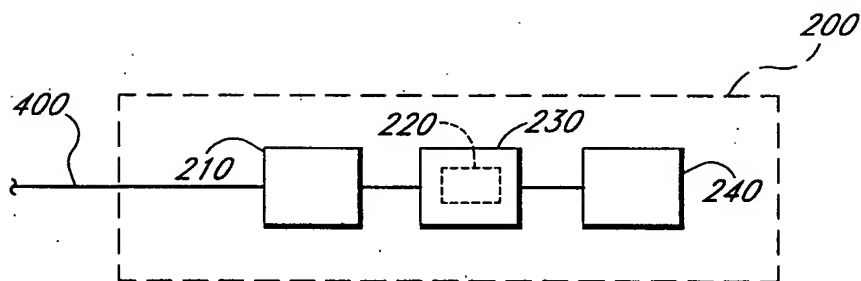


FIG. 3A

LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CP1

4 of 37

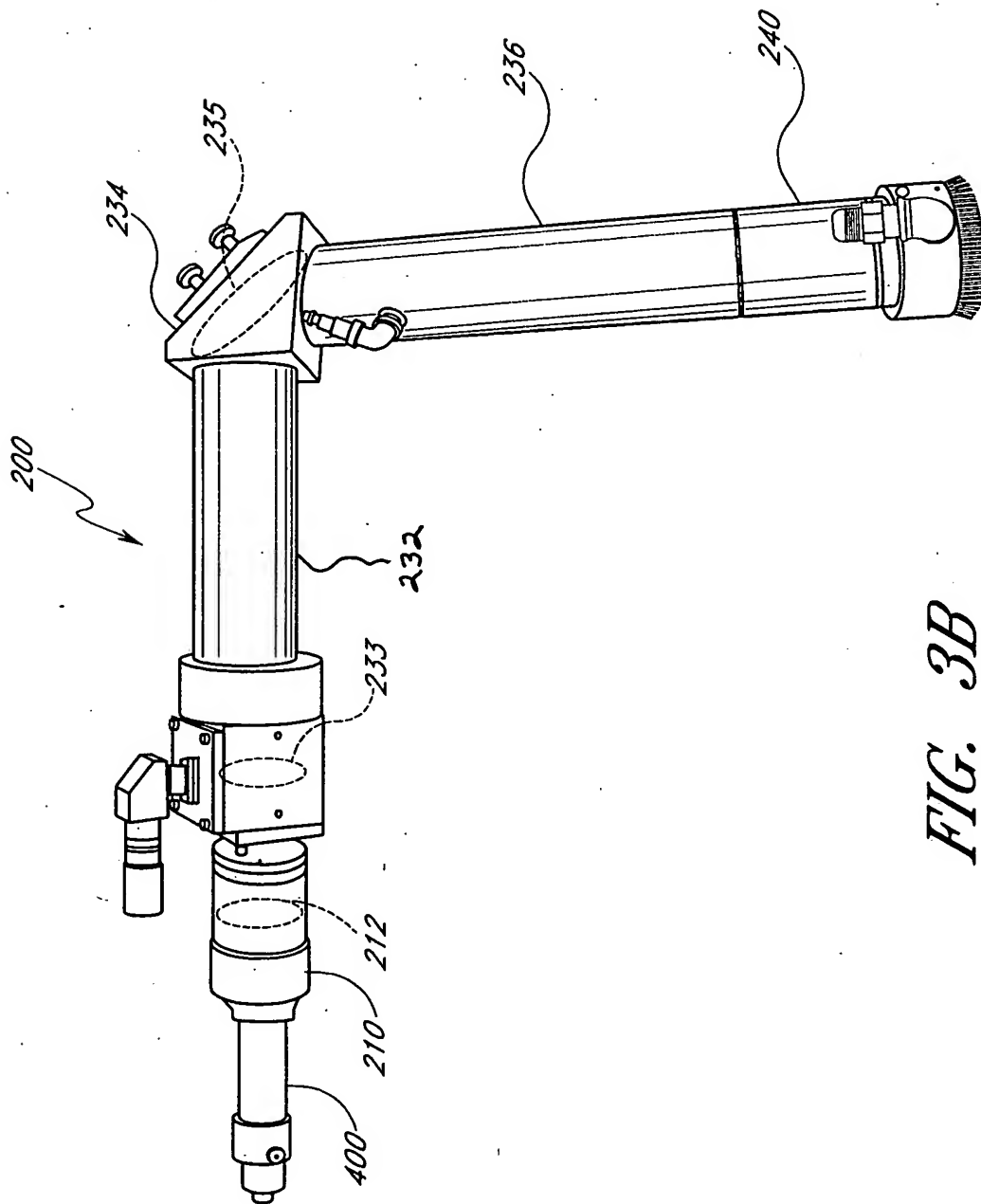


FIG. 3B

LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI

5 of 37

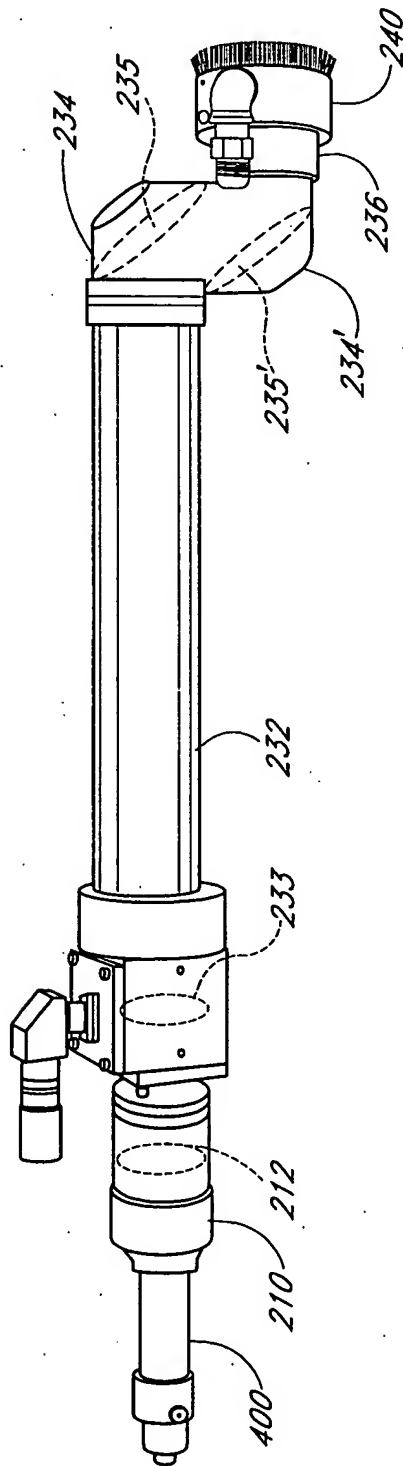


FIG. 3C

*LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE*

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI

6 of 37

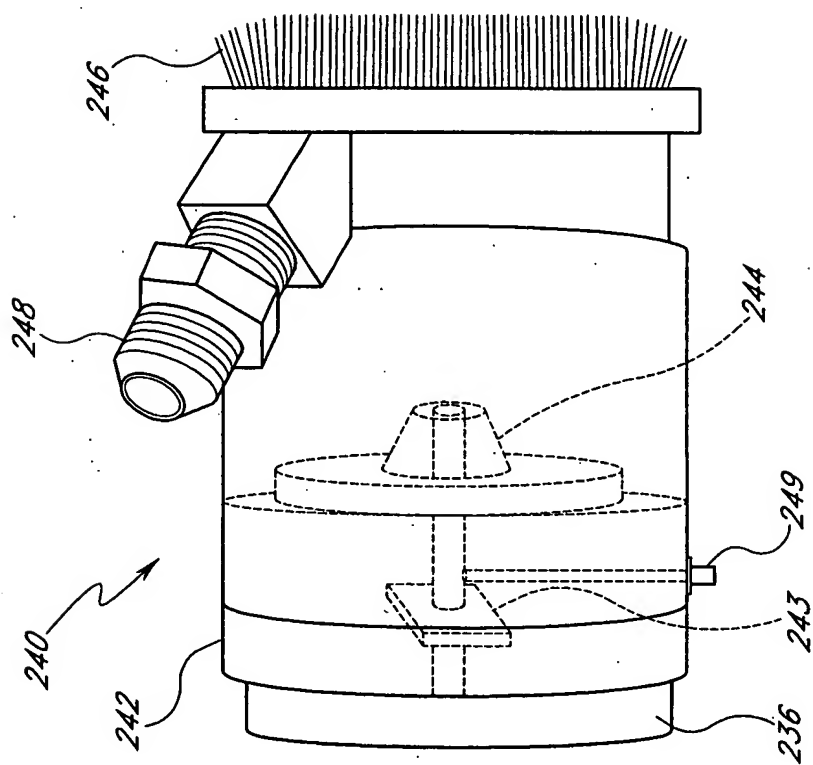


FIG. 4

*LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE*

Inventors: Paul E. Denney et al.

*Filed.: March 18, 2004 Atty Docket: LOMASR.023CP1
7 of 37*

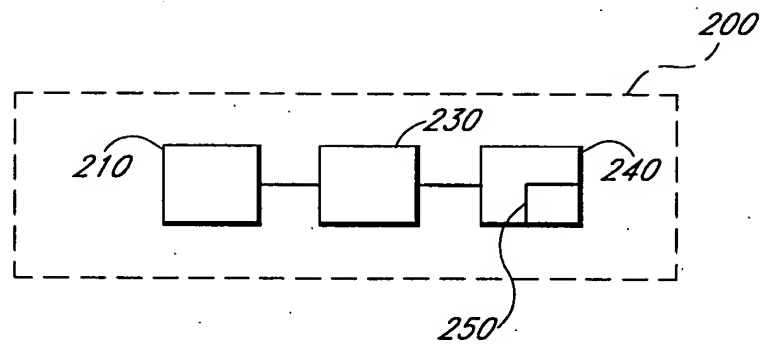


FIG. 5

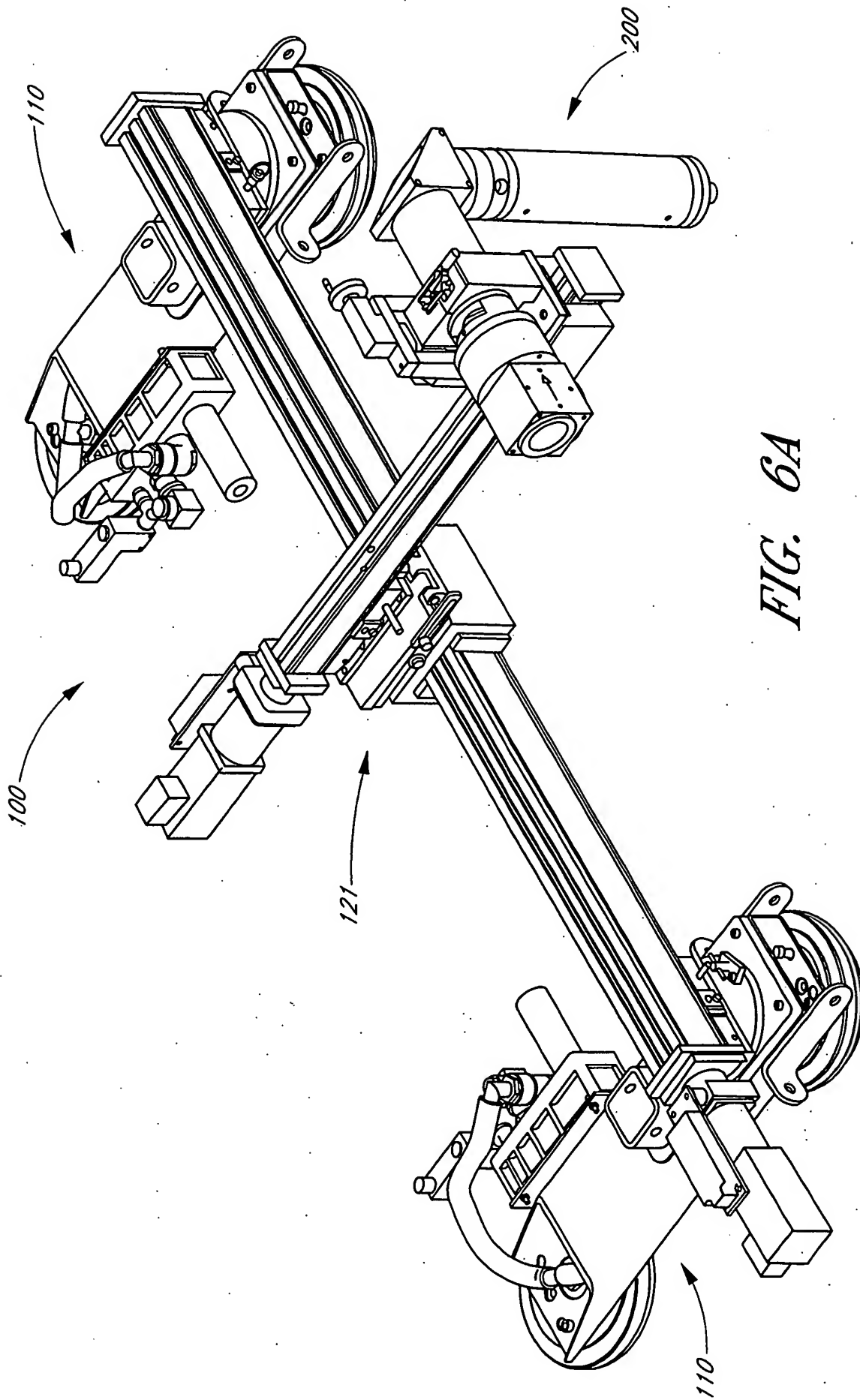


FIG. 6A

LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CP1
8 of 37

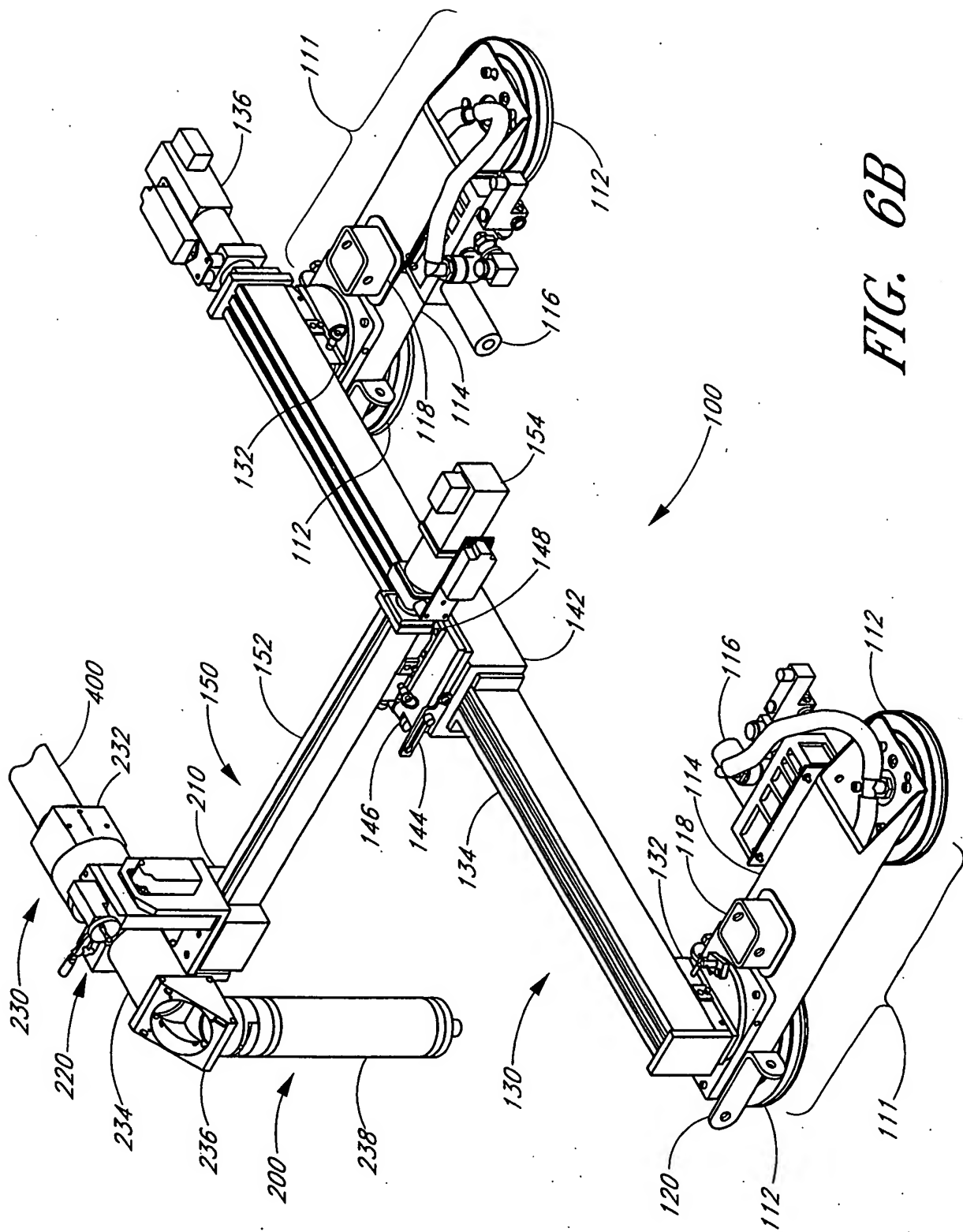


FIG. 6B

LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR-023CPI

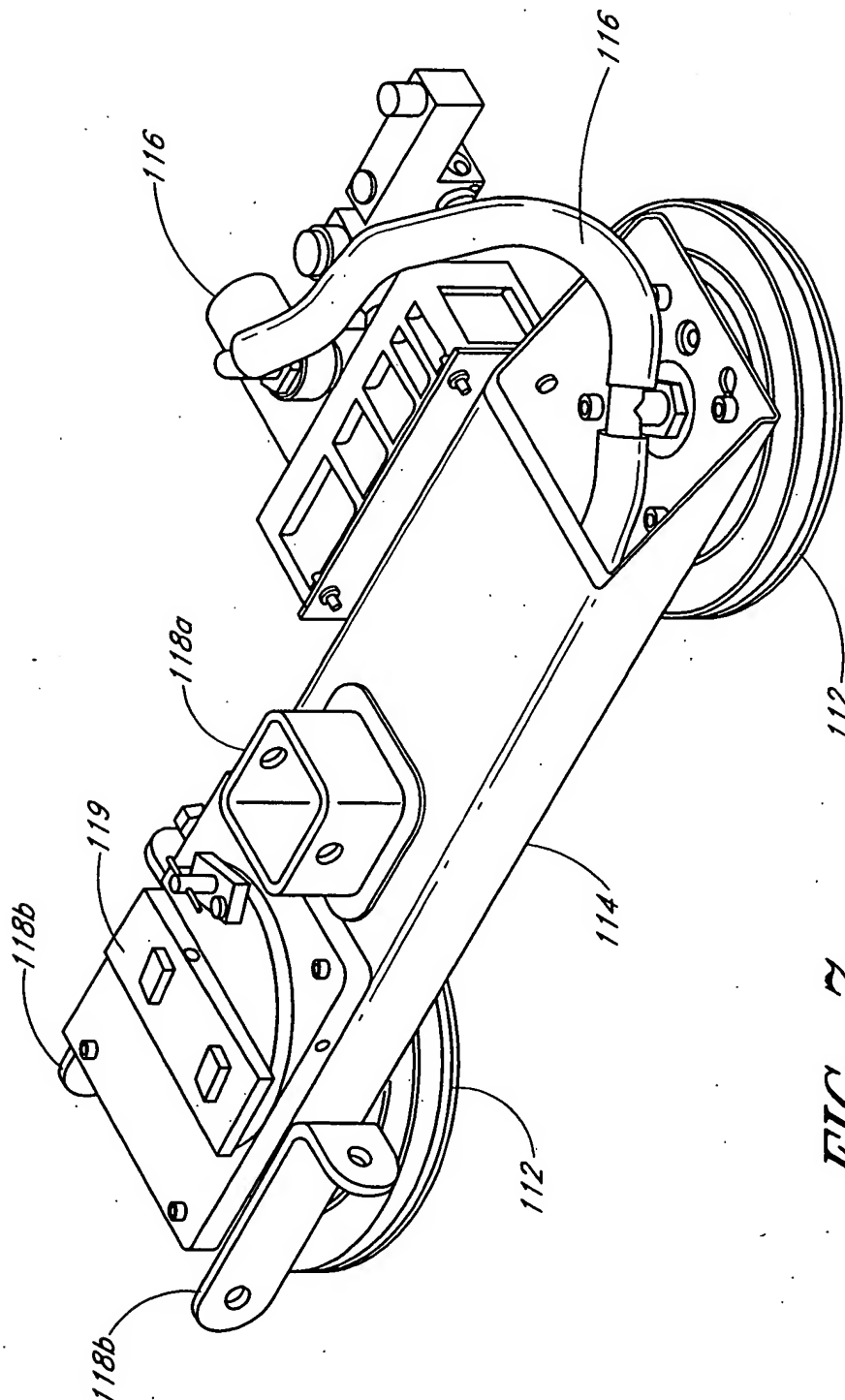
9 of 37

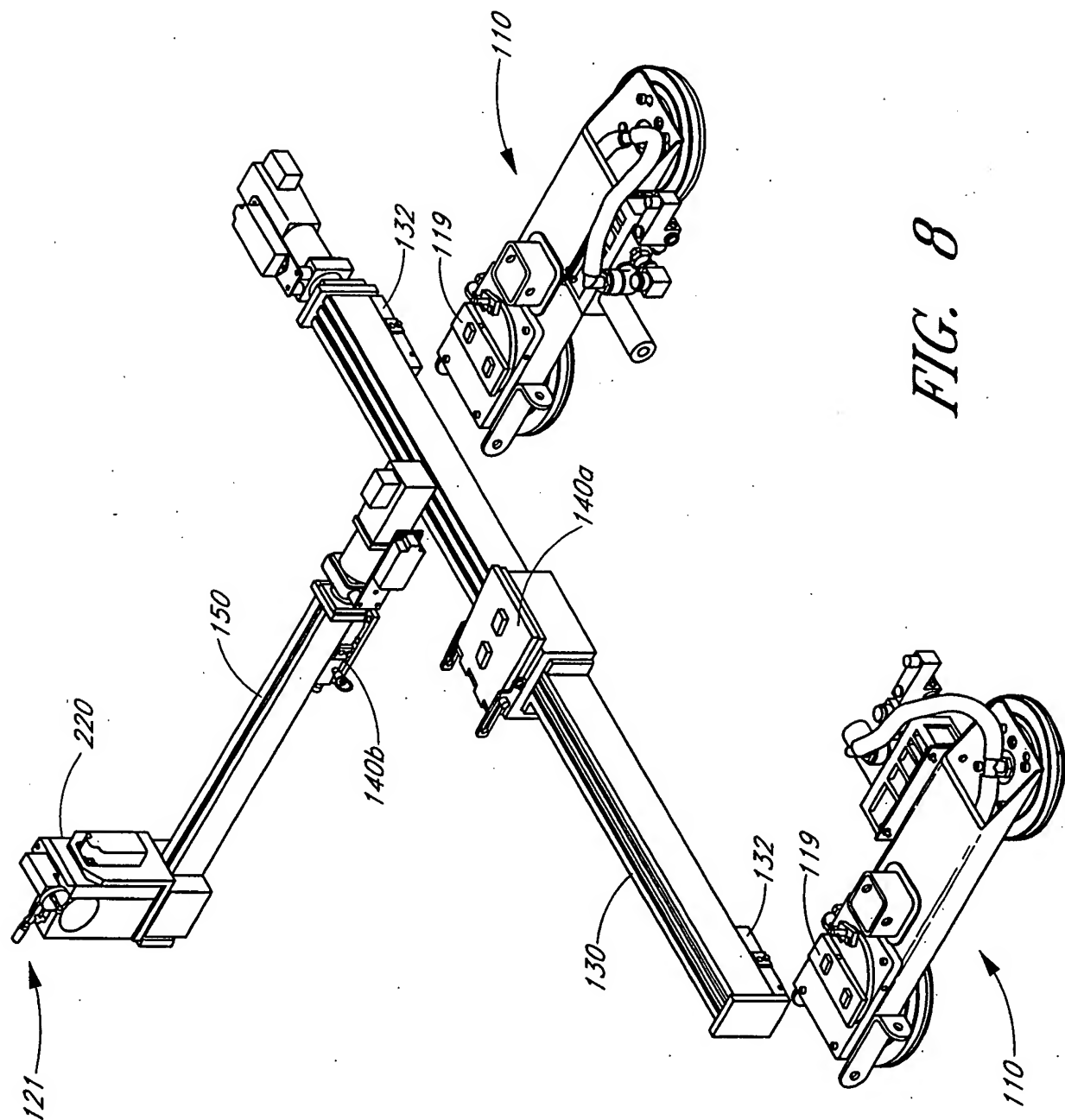
LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI

10 of 37





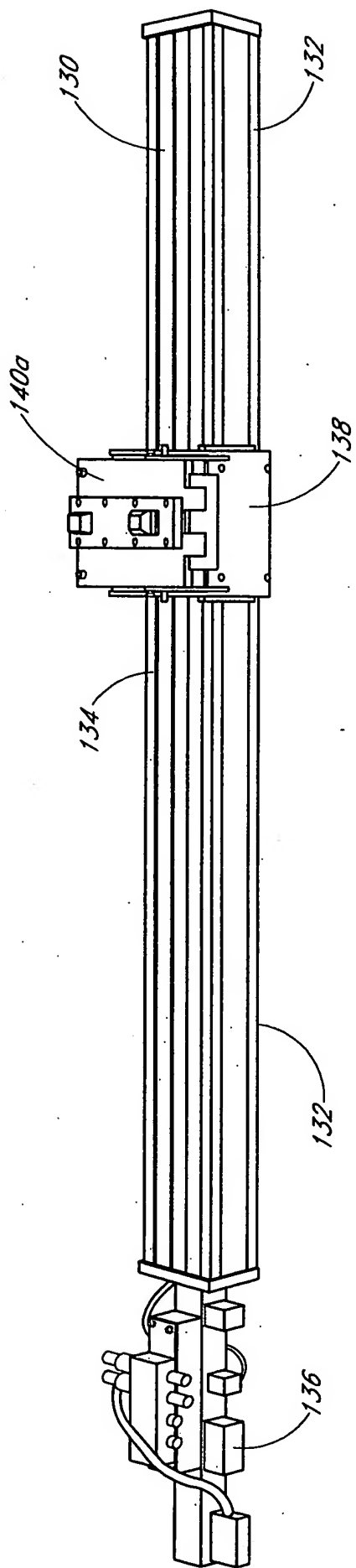


FIG. 9

LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CP1

12 of 37

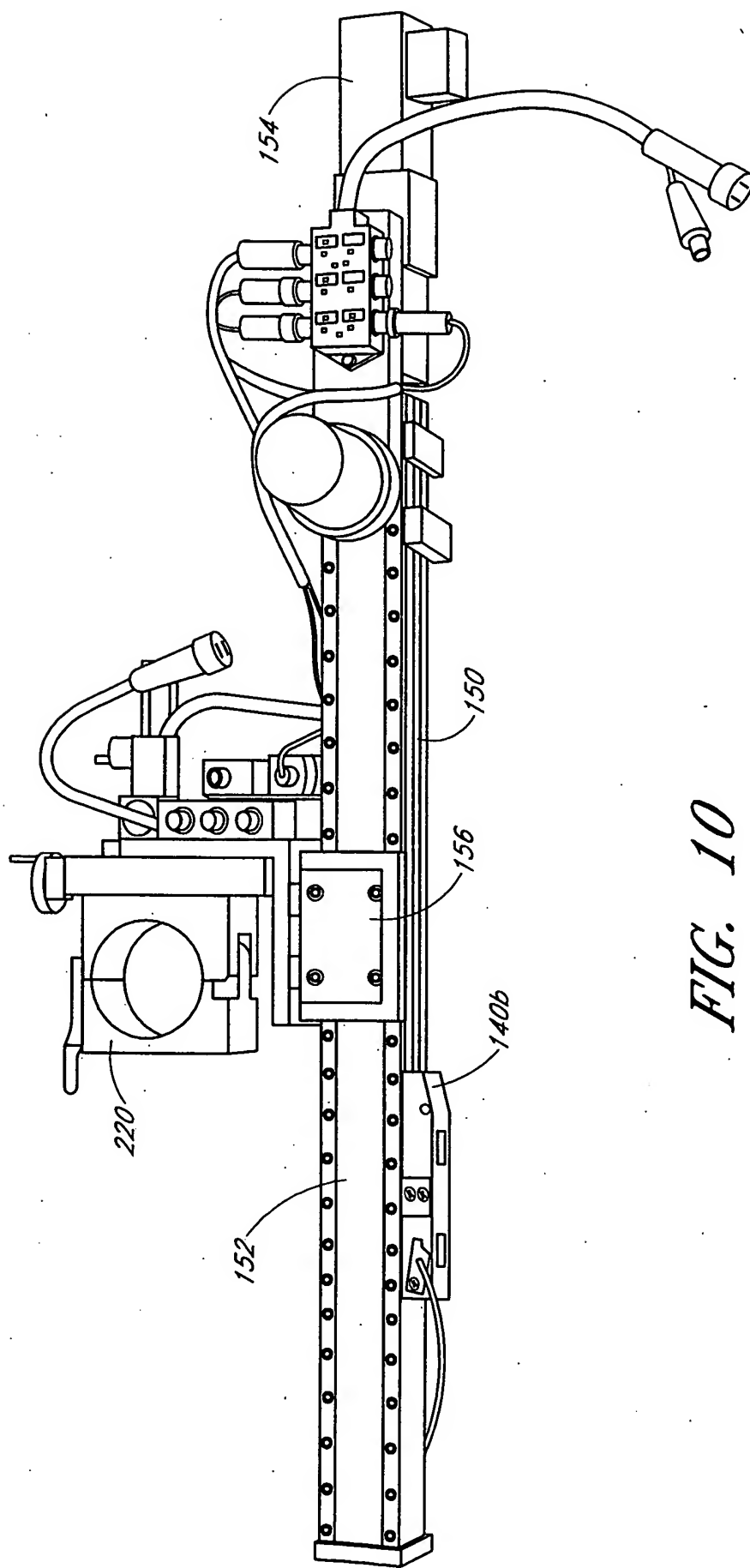


FIG. 10

LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR-023CPI

13 of 37

Inventors: Paul E. Denney et al.
Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI
14 of 37

Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI
14 of 37

14 of 37

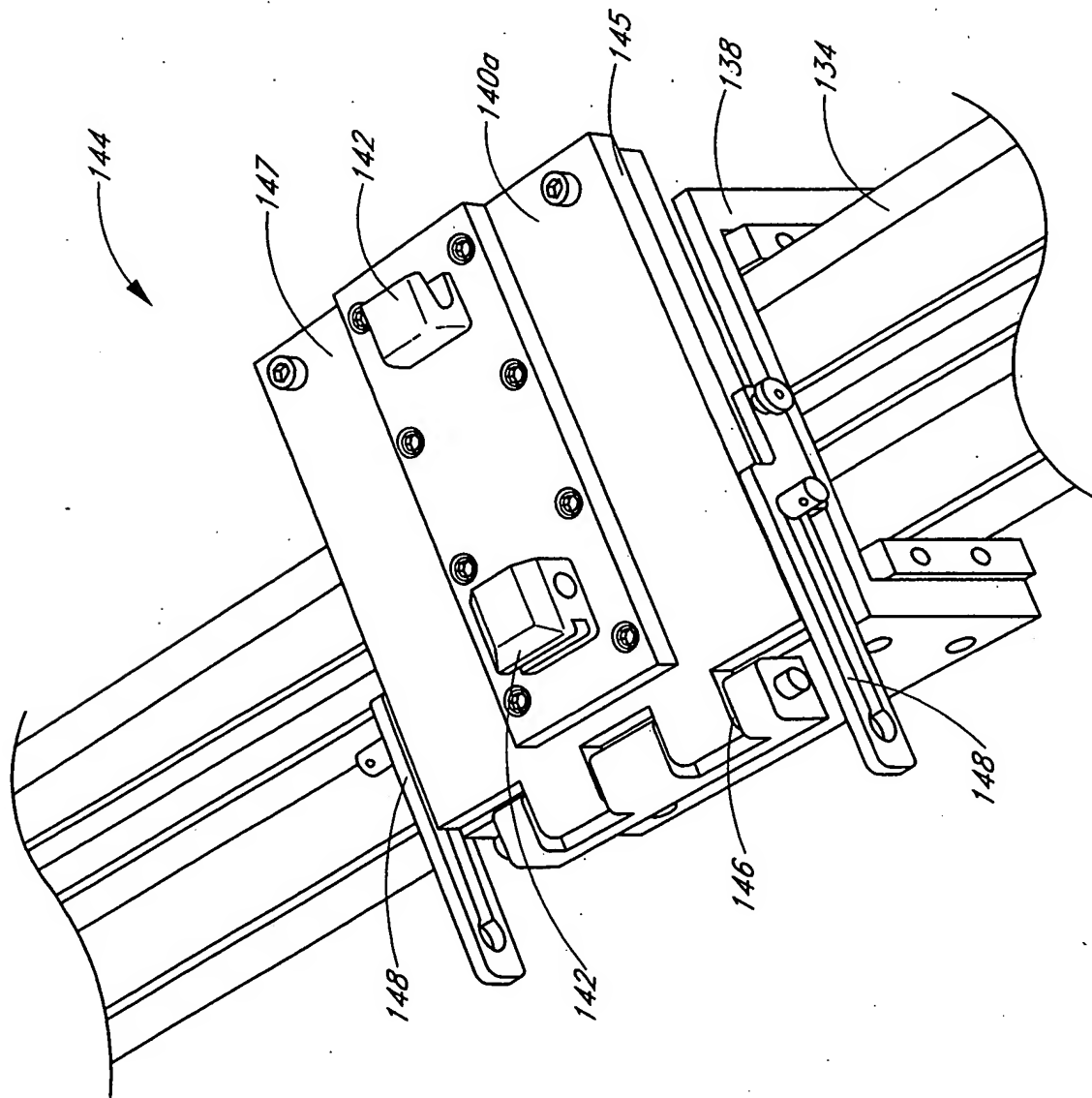


FIG. 11A

*LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE*

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CP1

15 of 37

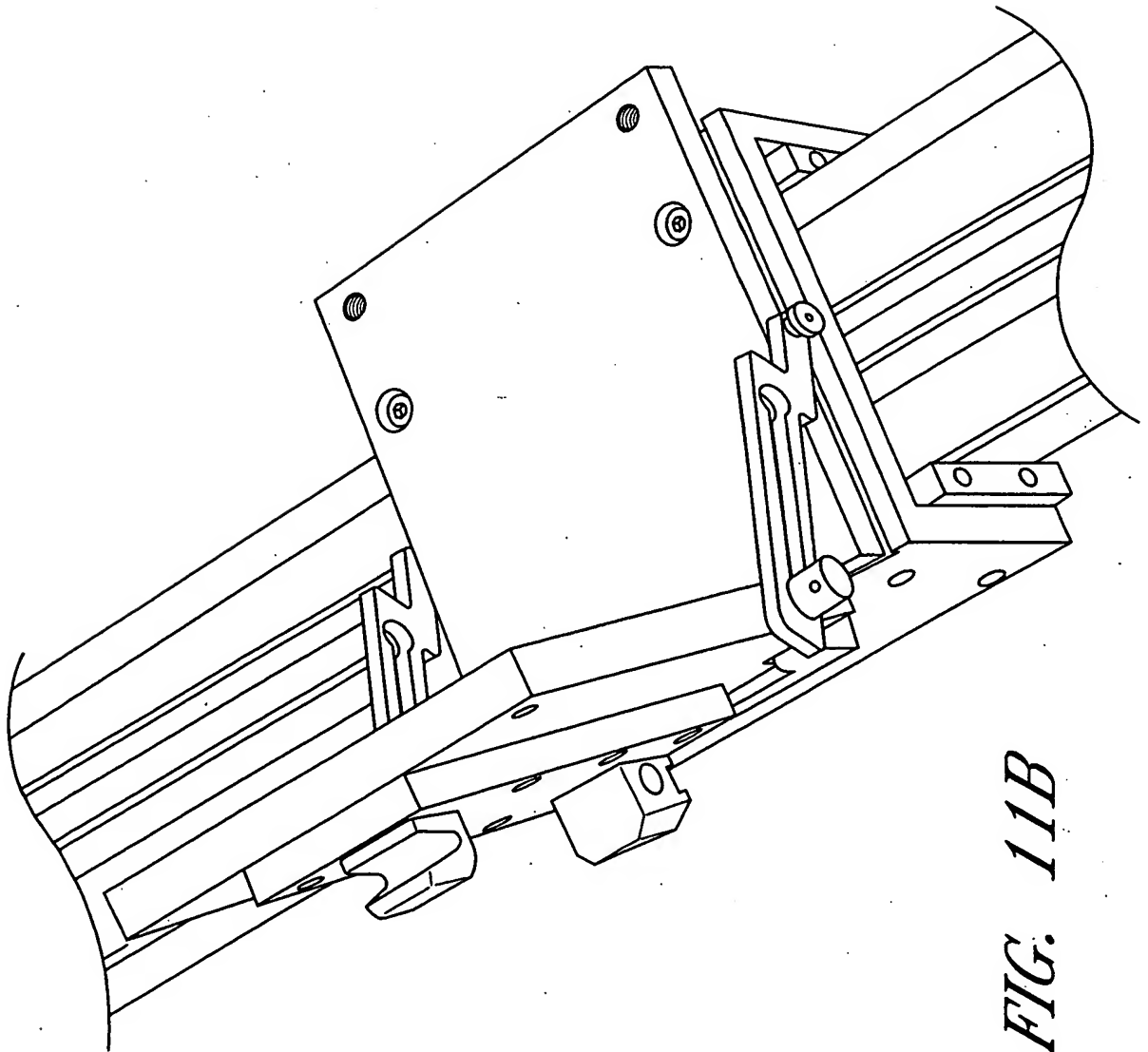


FIG. 11B

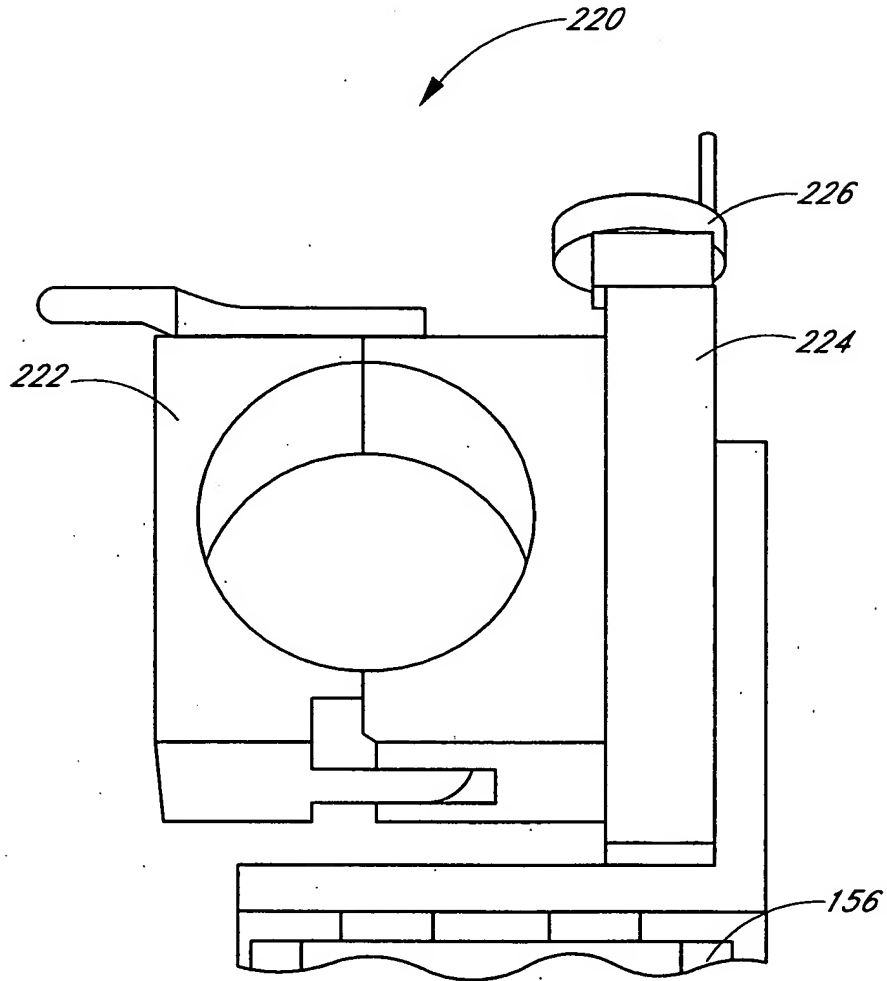


FIG. 12

LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CP1
17 of 37

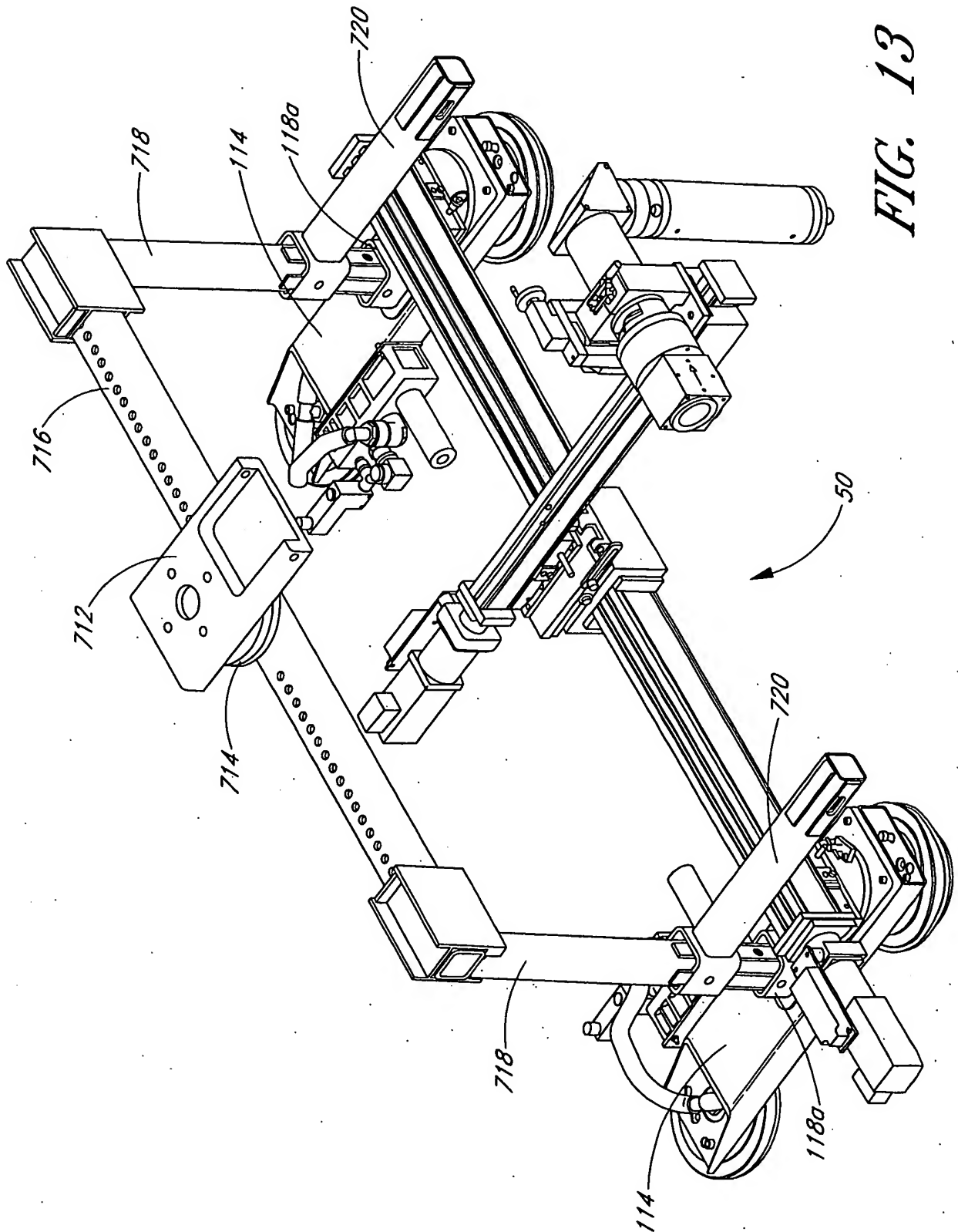


FIG. 13

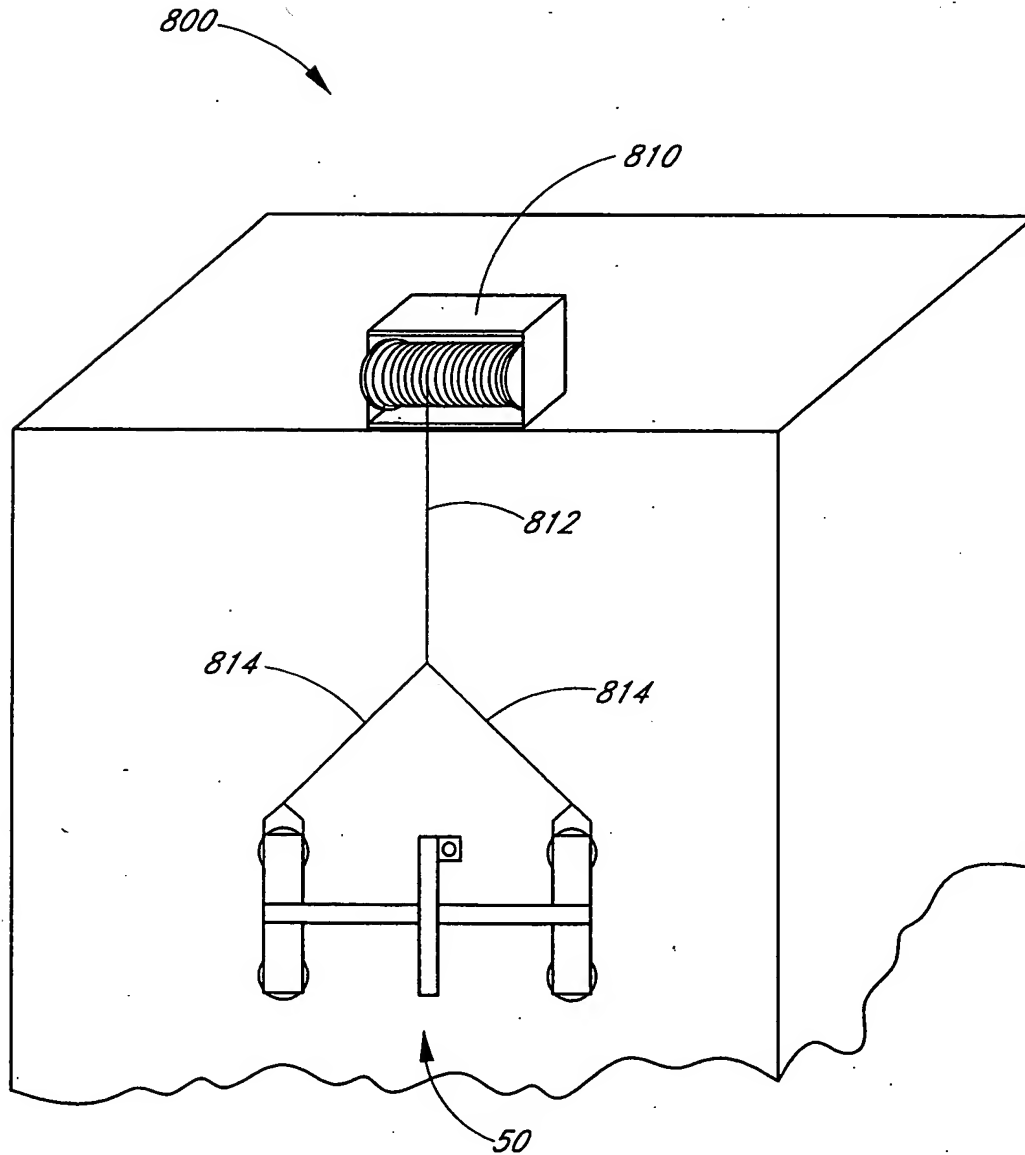


FIG. 14A

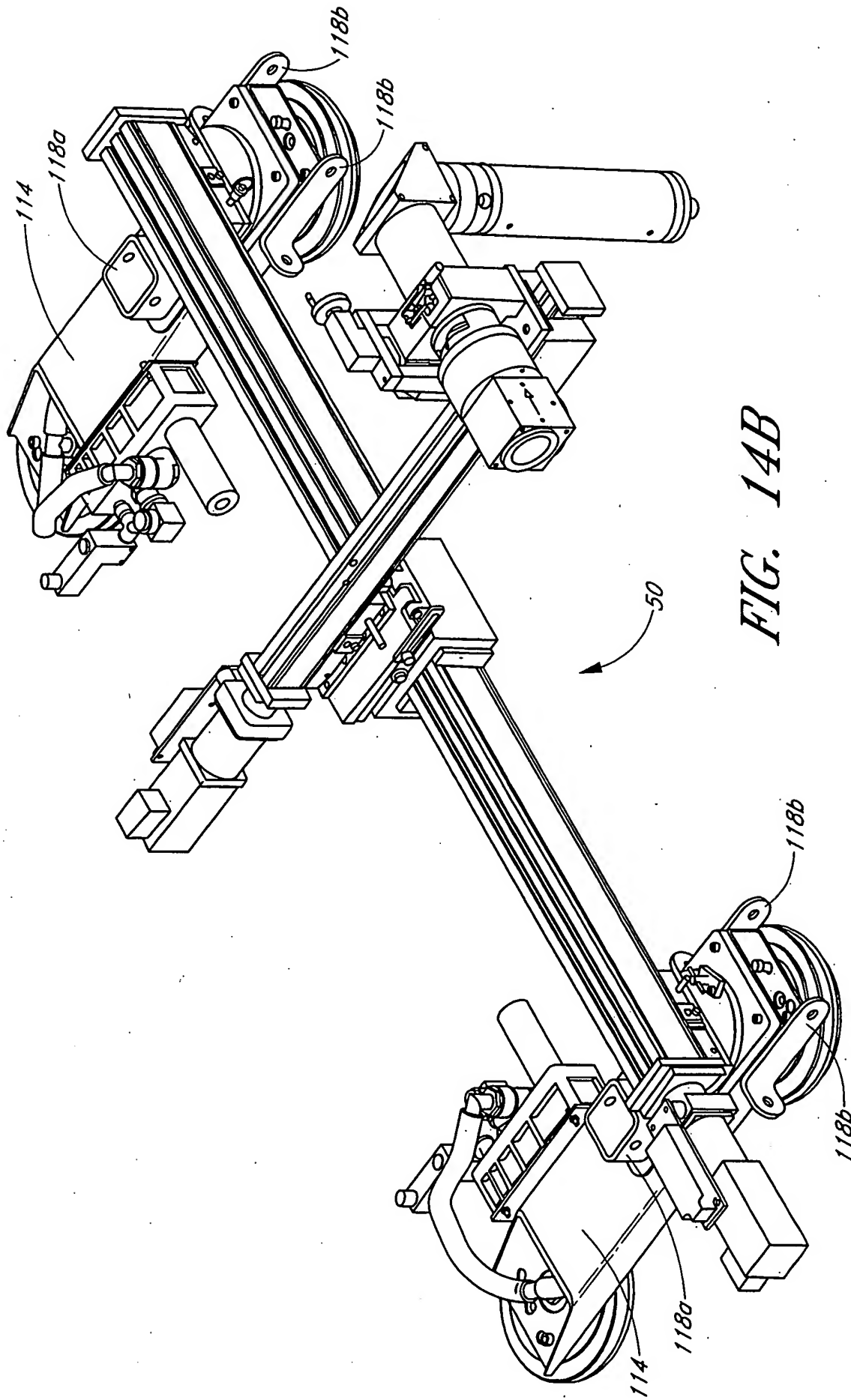


FIG. 14B

LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE
Inventors: Paul E. Denney et al.
Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI
19 of 37

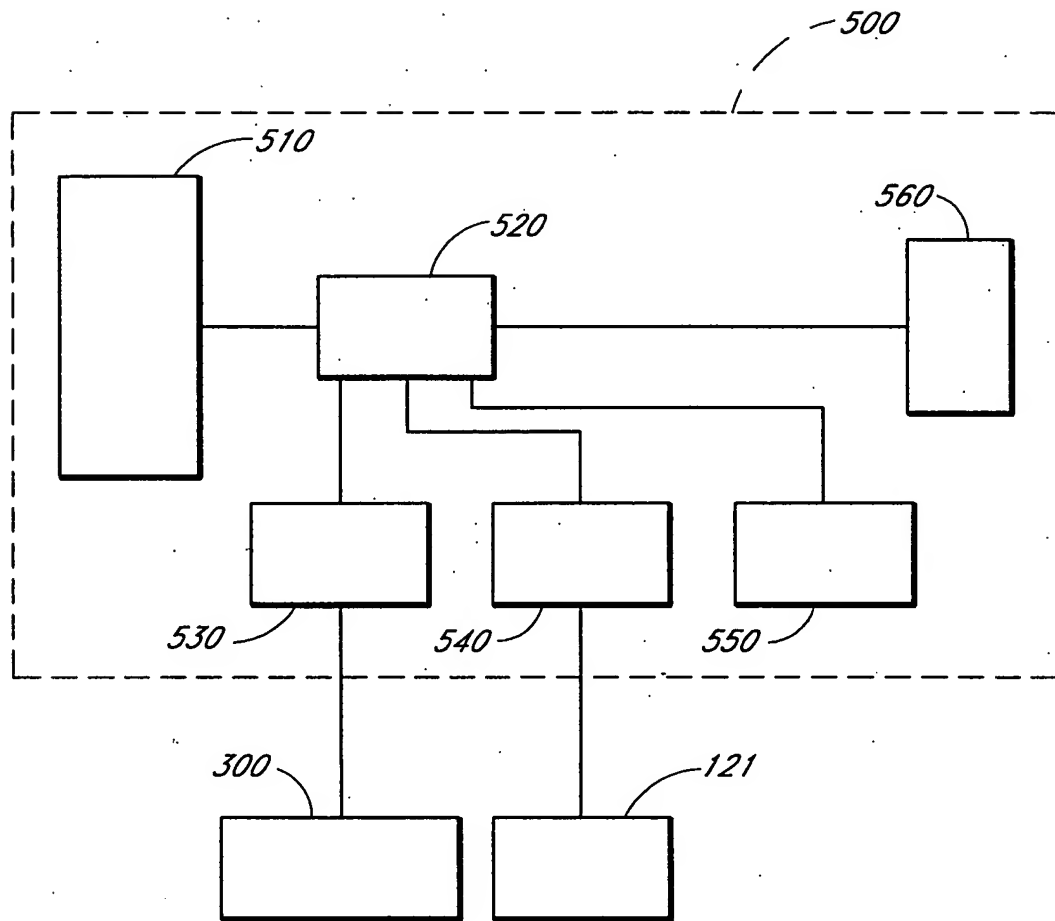


FIG. 15

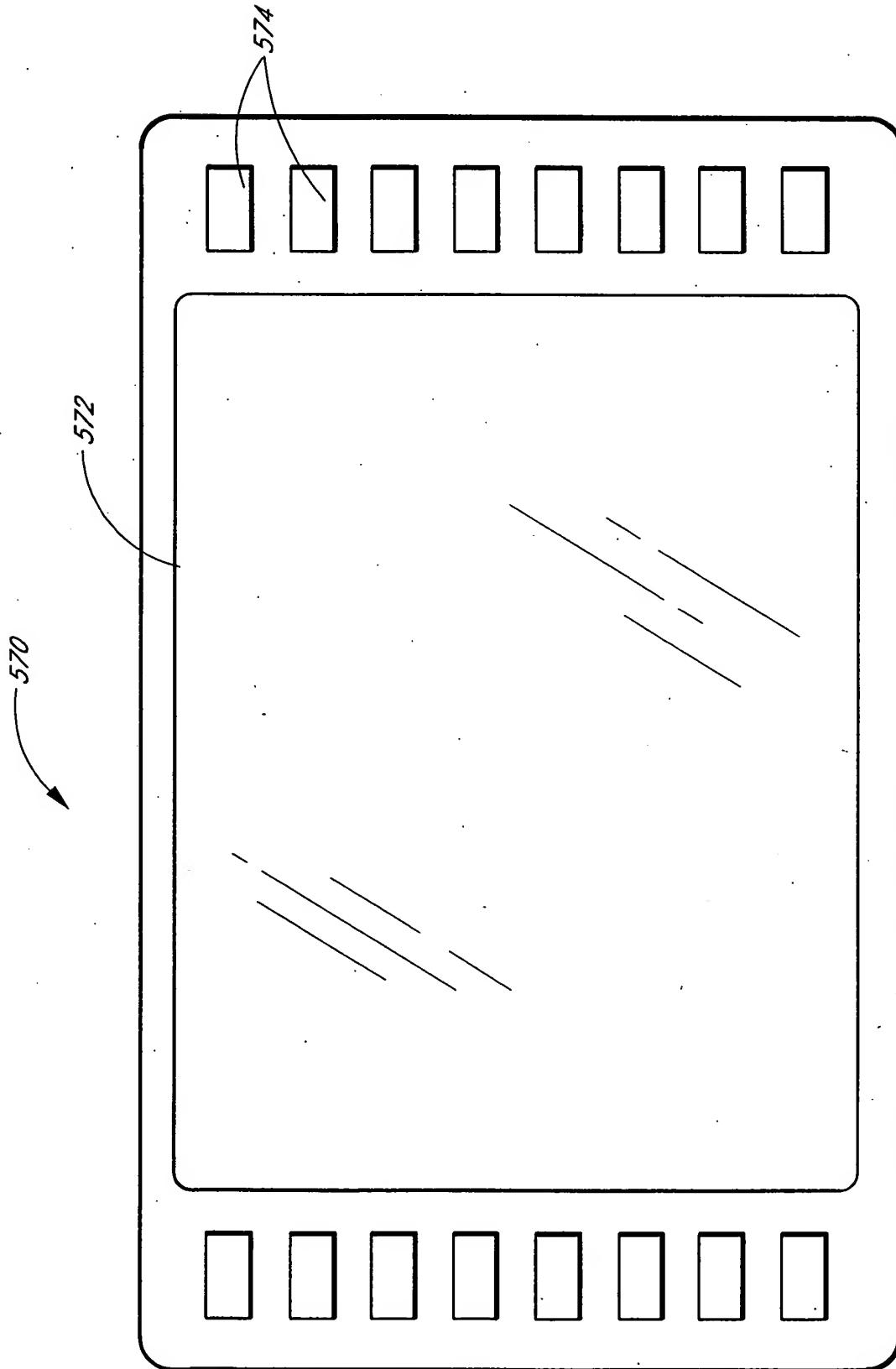


FIG. 16

LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CP1

22 of 37

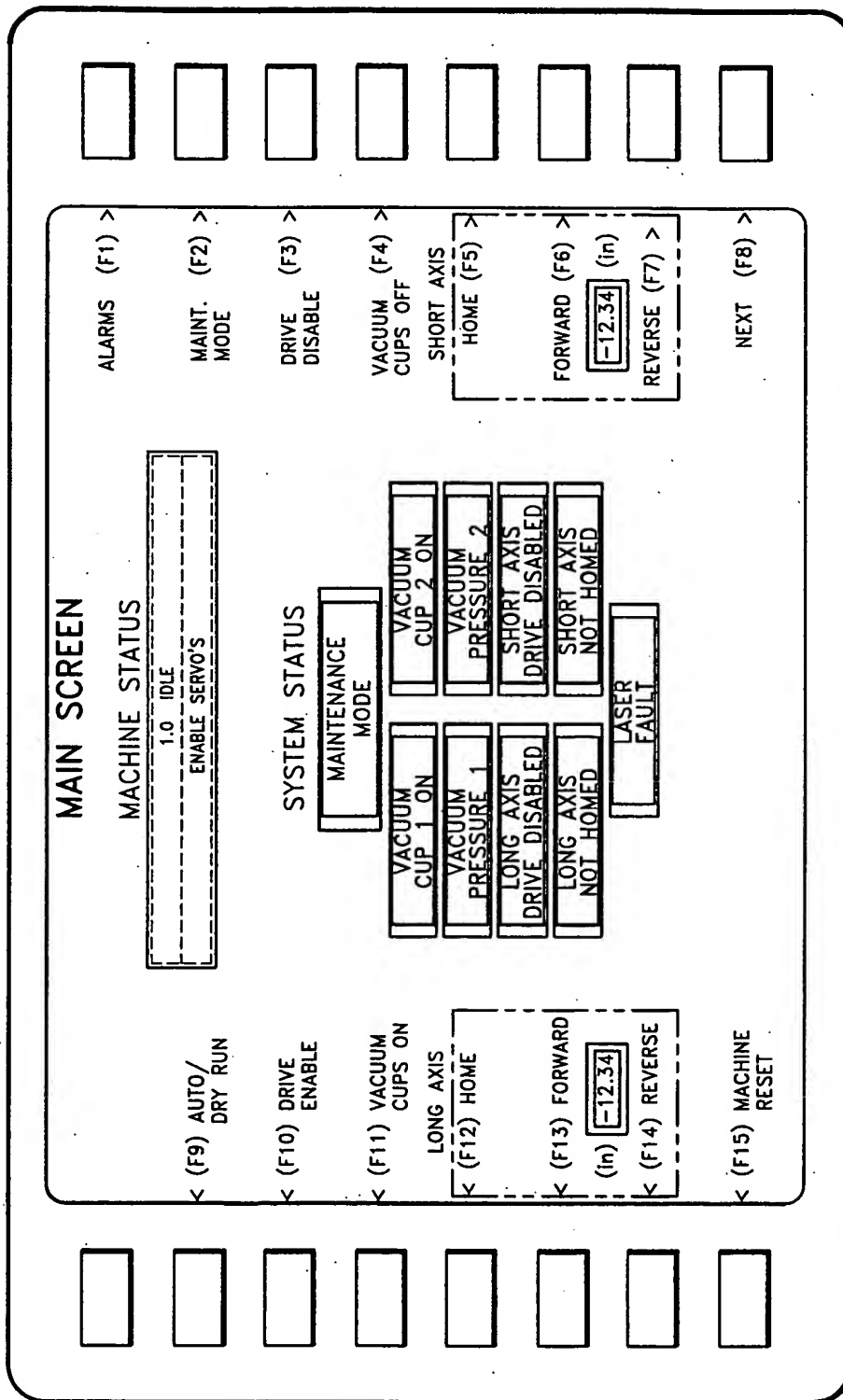


FIG. 17A

LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI

23 of 37

SELECT OPERATION SCREEN

MACHINE STATUS

1.0 IDLE
ENABLE SERVO'S

SYSTEM STATUS

LONG AXIS POSITION

-12.34 (in)

SHORT AXIS POSITION

-12.34 (in)

< (F9) AUTO/
DRY RUN

< (F11) CIRCLE

< (F12) PIERCE

< (F13) STRAIGHT CUT

< (F14) SURFACE
KEYING

< (F15) MACHINE
RESET

MAINTENANCE MODE

CIRCLE IDLE

PIERCE IDLE

STRAIGHT CUT IDLE

SURFACE KEYING IDLE

NEXT (F8) >

FIG. 17B

Inventors: Paul E. Denney et al.
Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI
24 of 37

24 of 37



FIG. 17C

LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI

25 of 37

PIERCE SETUP/OPERATION SCREEN

MACHINE STATUS

1.0 IDLE
ENABLE SERVO'S

PIERCE STATUS

3.0 PIERCE SEQUENCE IDLE
PRESS CYCLE START TO BEGIN

SYSTEM STATUS

MAINTENANCE
MODE

PIERCE PARAMETERS

TIME (sec)

STATUS 1234

SET POINT 1234

LBU
PROGRAM NUMBER

STATUS 12

SET POINT 12

LONG AXIS POSITION

-12.34 (in)

SHORT AXIS POSITION

-12.34 (in)

CYCLE (F4) >
STOP

< (F9) AUTO/
DRY RUN

< (F11) CYCLE
START

< (F15) MACHINE
RESET

> NEXT (F8)

FIG. 17D

Inventors: Paul E. Denney et al.
Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI
26 of 37

26 of 37



FIG. 17E

Inventors: Paul E. Denney et al.
Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI
27 of 37

Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI

27 of 37



FIG. 17F

Inventors: Paul E. Denney et al.
Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI
28 of 37

Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI
28 of 37

FAULT SCREEN

Message

Trig

mm/dd/yy

(F9) AUTO/ DRY RUN

(F15) MACHINE RESET

RETURN (F1) >

ACK ALL (F3) >

NEXT (F8) >

FIG. 17G

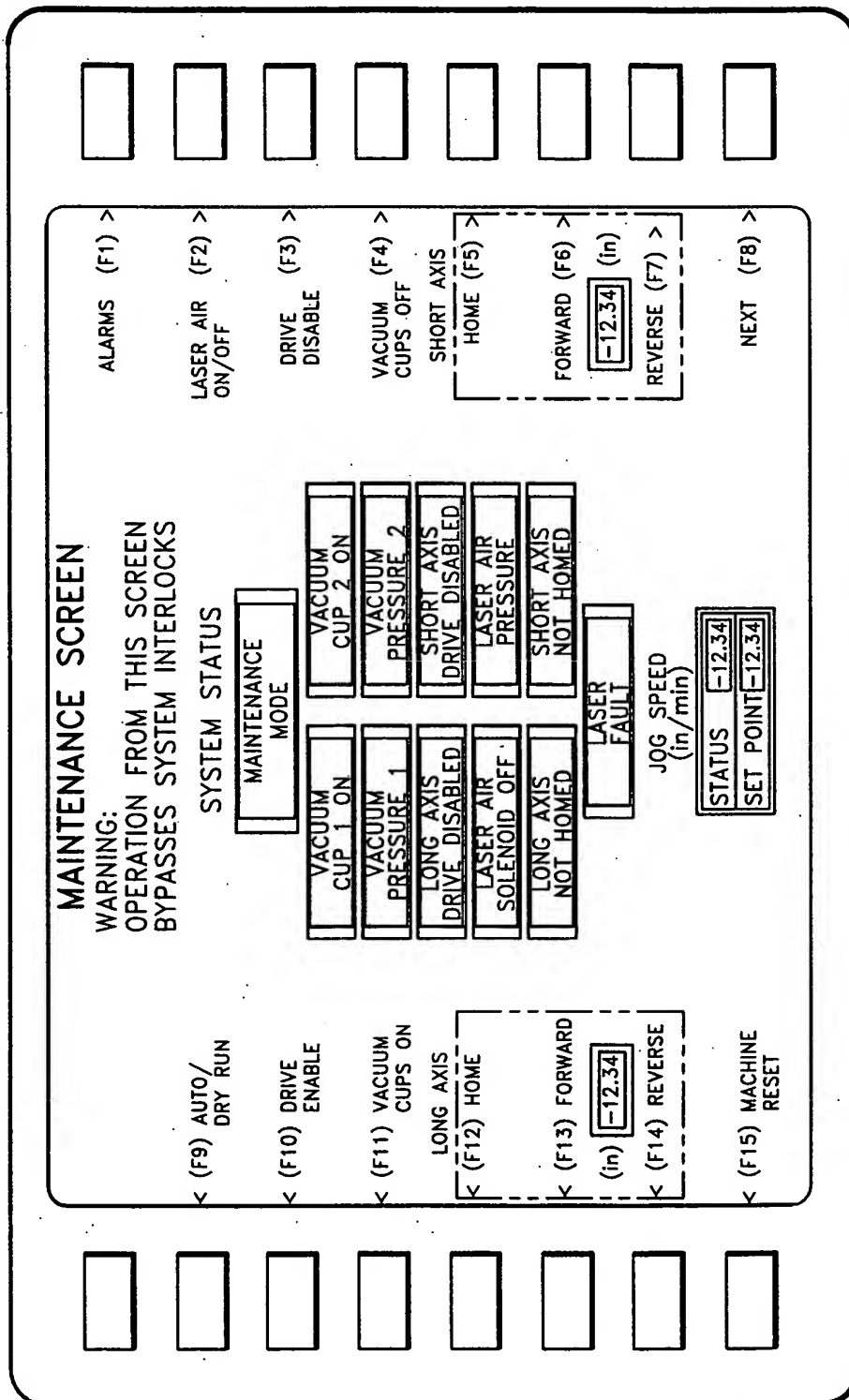


FIG. 17H

LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CP1

30 of 37

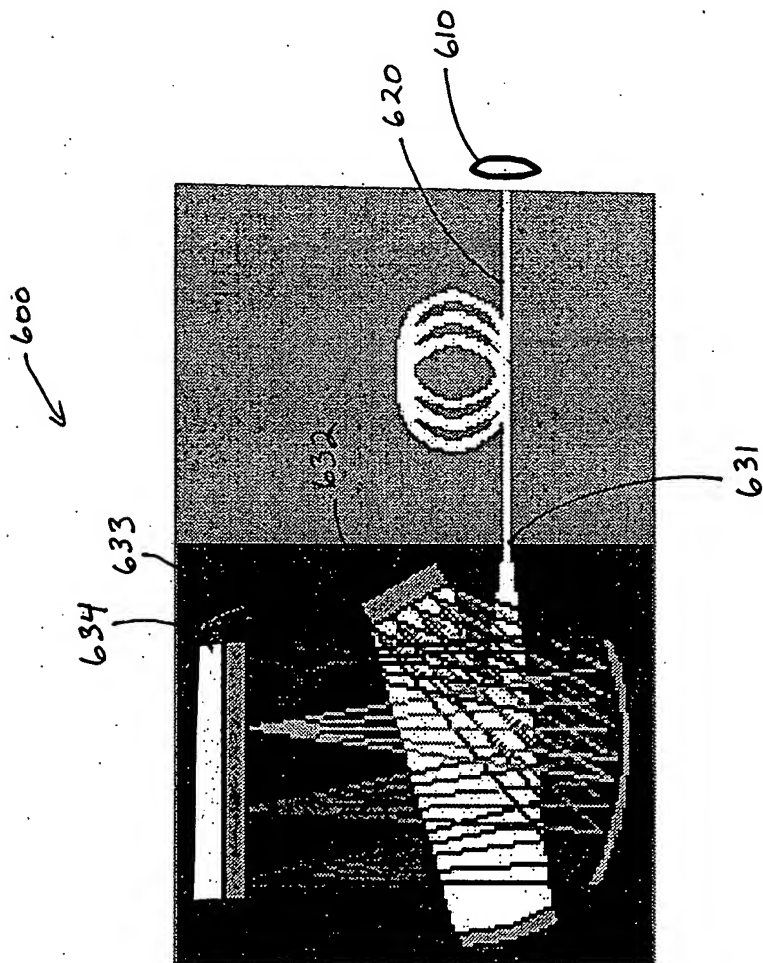


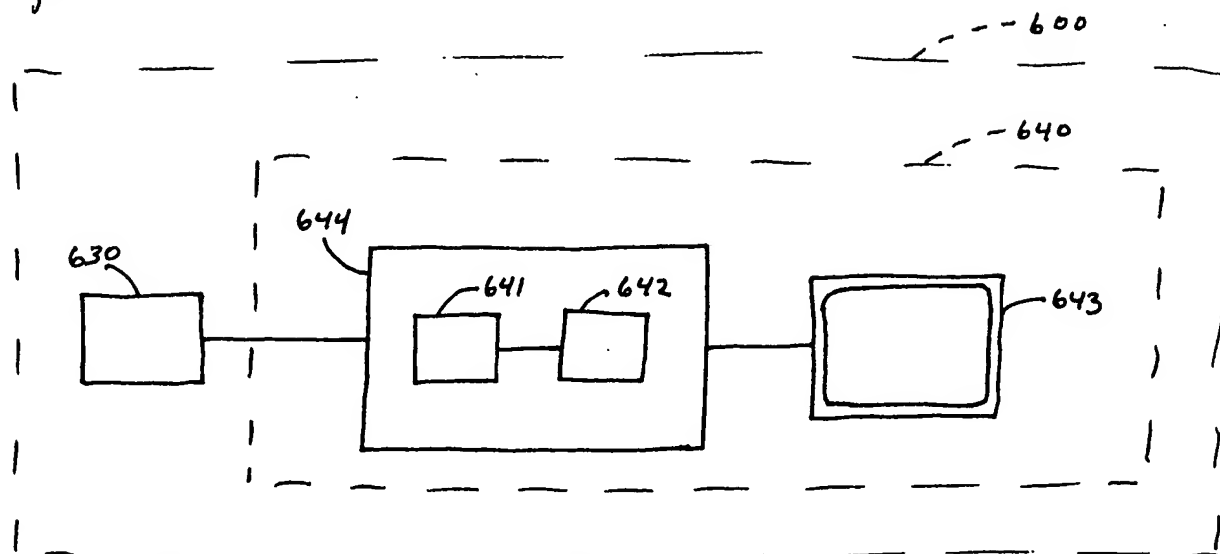
Figure 18A:

LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CP1
31 of 37

Figure 18B:



LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI

32 of 37

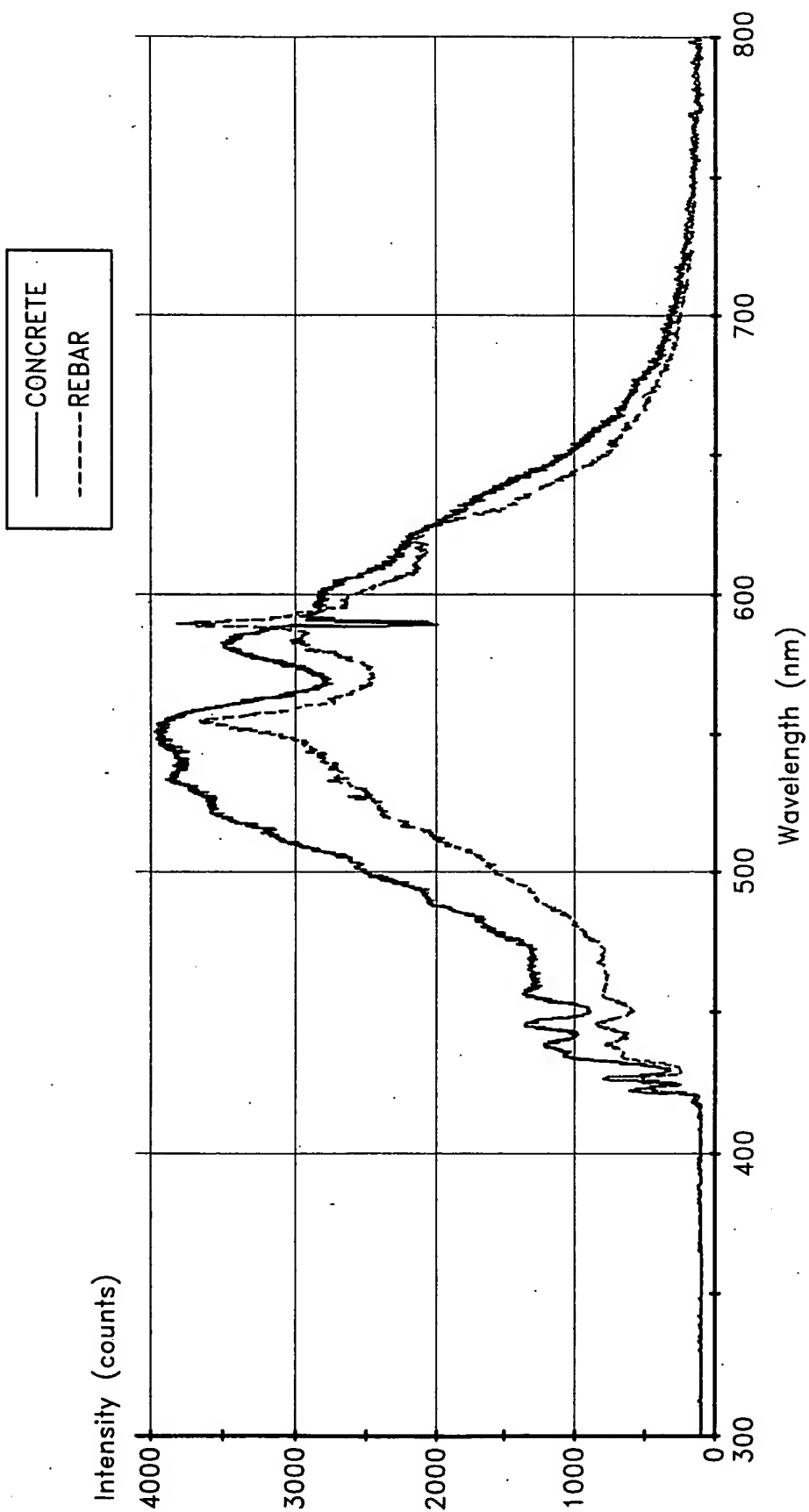
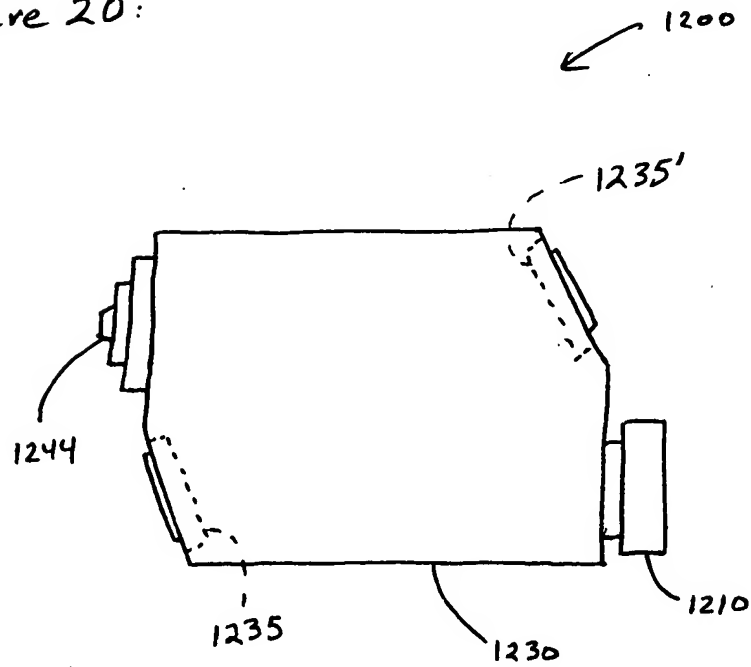


FIG. 19

Figure 20:



LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CPI
34 of 37

Figure 21A:

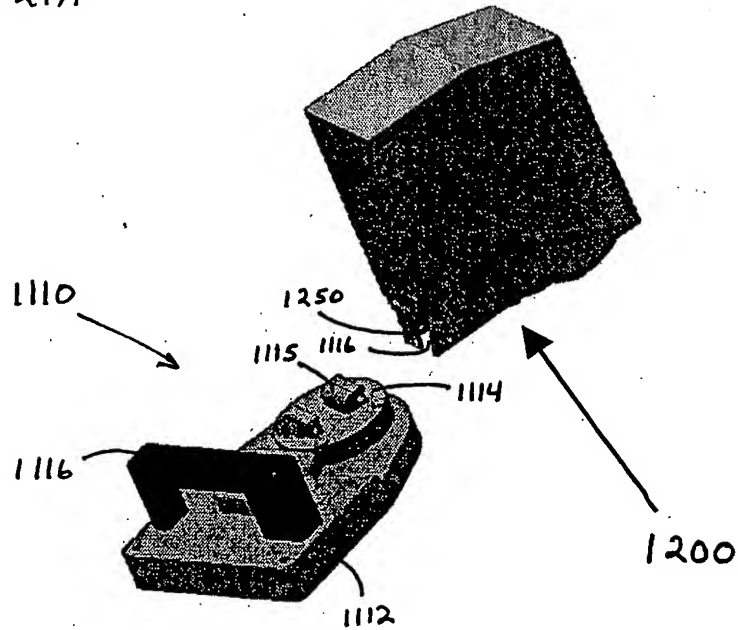
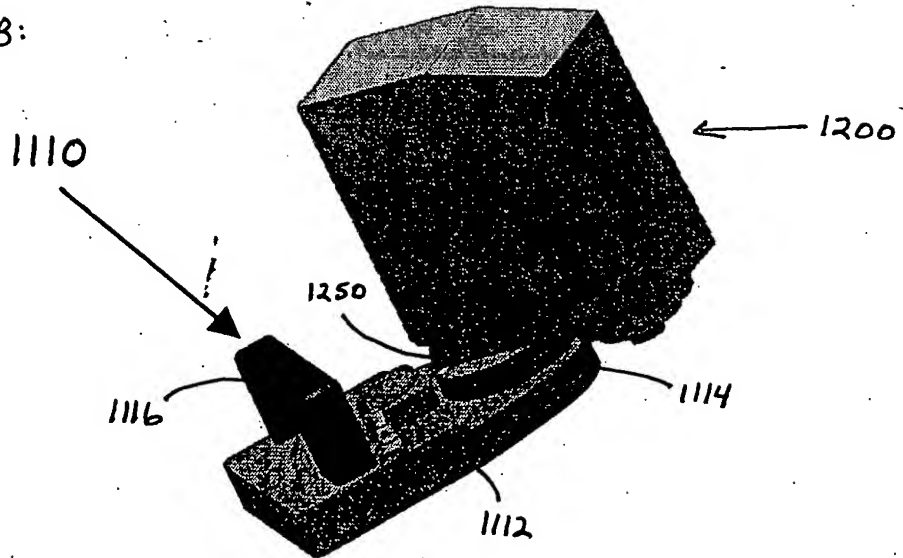


Figure 21B:



LASER HEAD FOR IRRADIATION AND REMOVAL OF
MATERIAL FROM A SURFACE OF A STRUCTURE

Inventors: Paul E. Denney et al.

Filed.: March 18, 2004 Atty Docket: LOMASR.023CP1

35 of 37

Figure 21C:

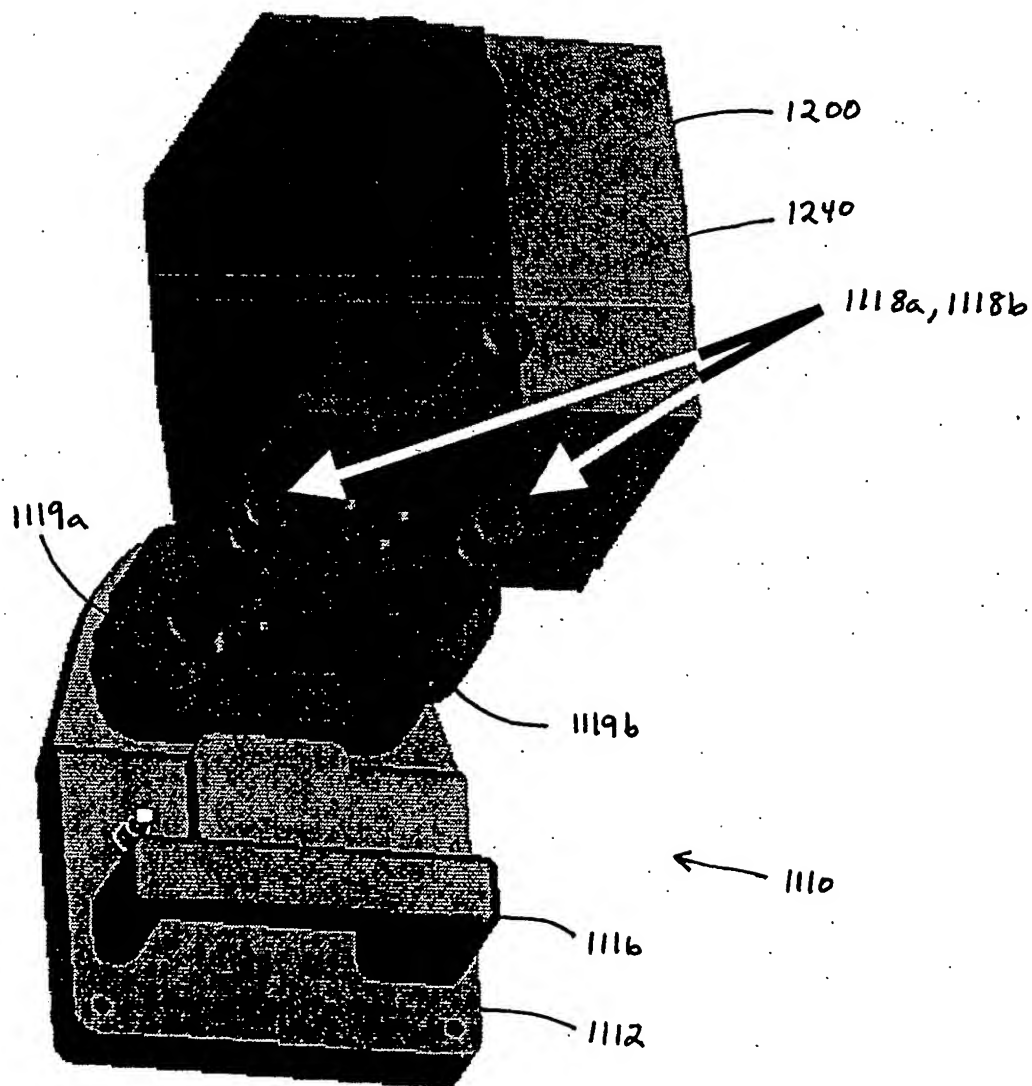


Figure 210:

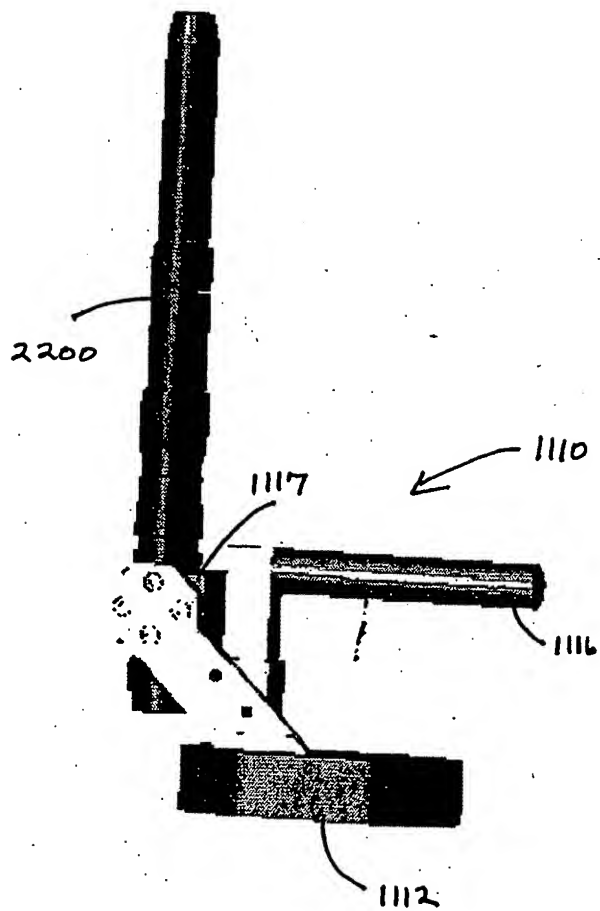


Figure 22:

